NOV 10 '88

I 49.89/2:85(15)map B8

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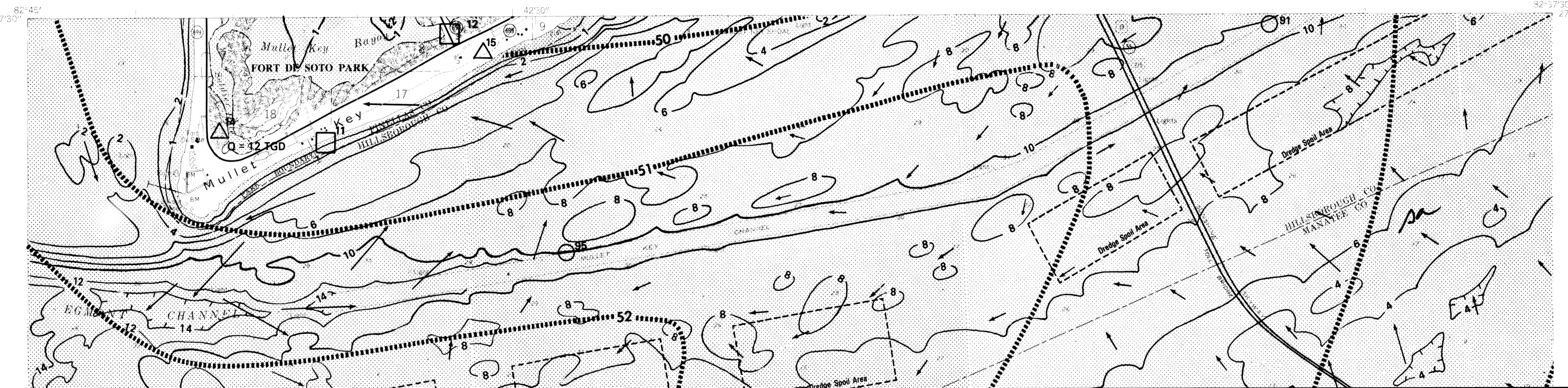
ORIGINAL

I 49.89/2:85(15) map B8

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

ANNA MARIA QUADRANGLE
FLORIDA
7.5 MINUTE SERIES (TOPOGRAPHIC)

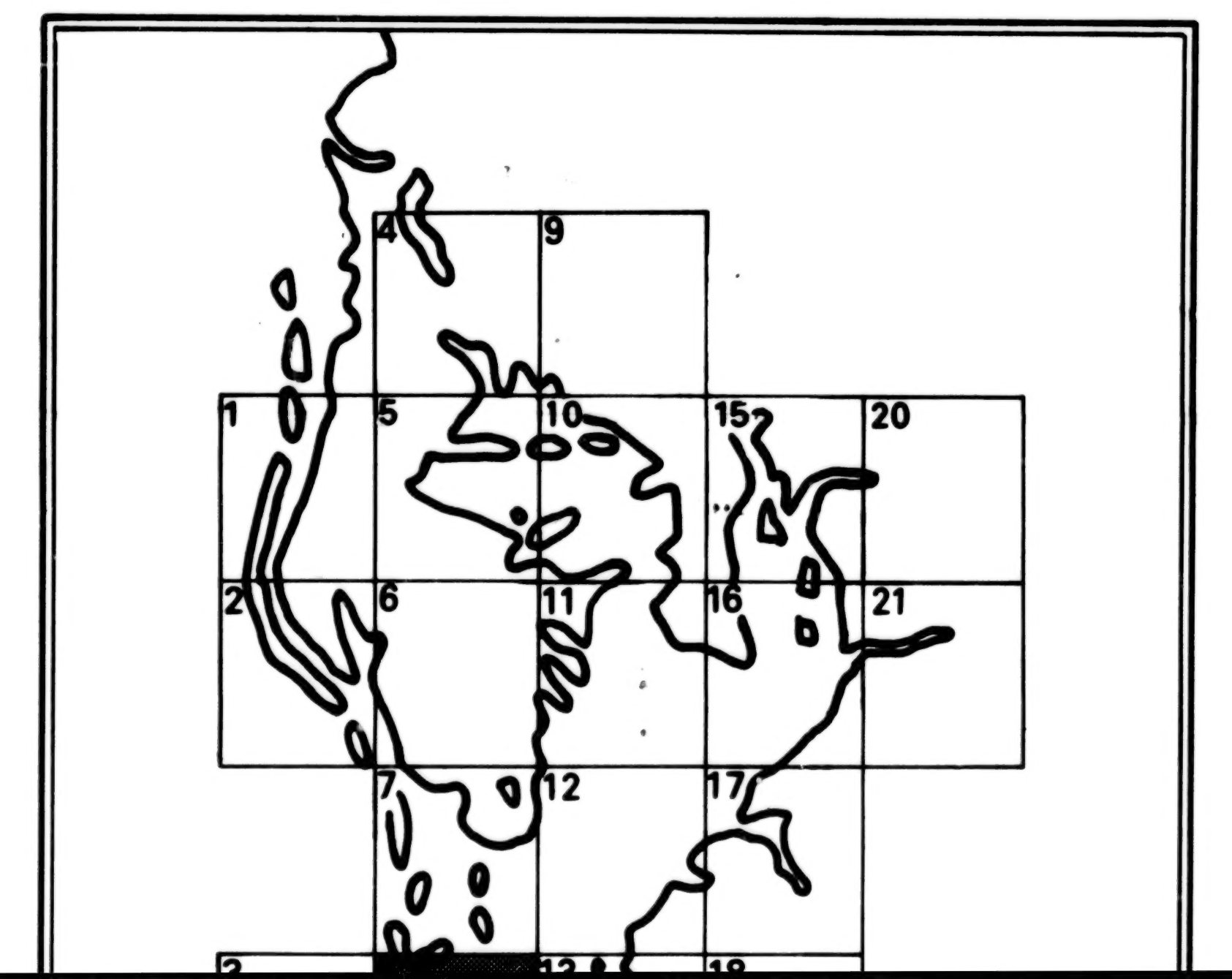

82°40'
27°37'30"
82°37'30"
27°37'30"
FORT DE SOTO PARK
Mullet Key
Q = 12 TGD
Dredge Spoil Area
EGMONT CHANNEL
50
51
52
10
8
6
4
2

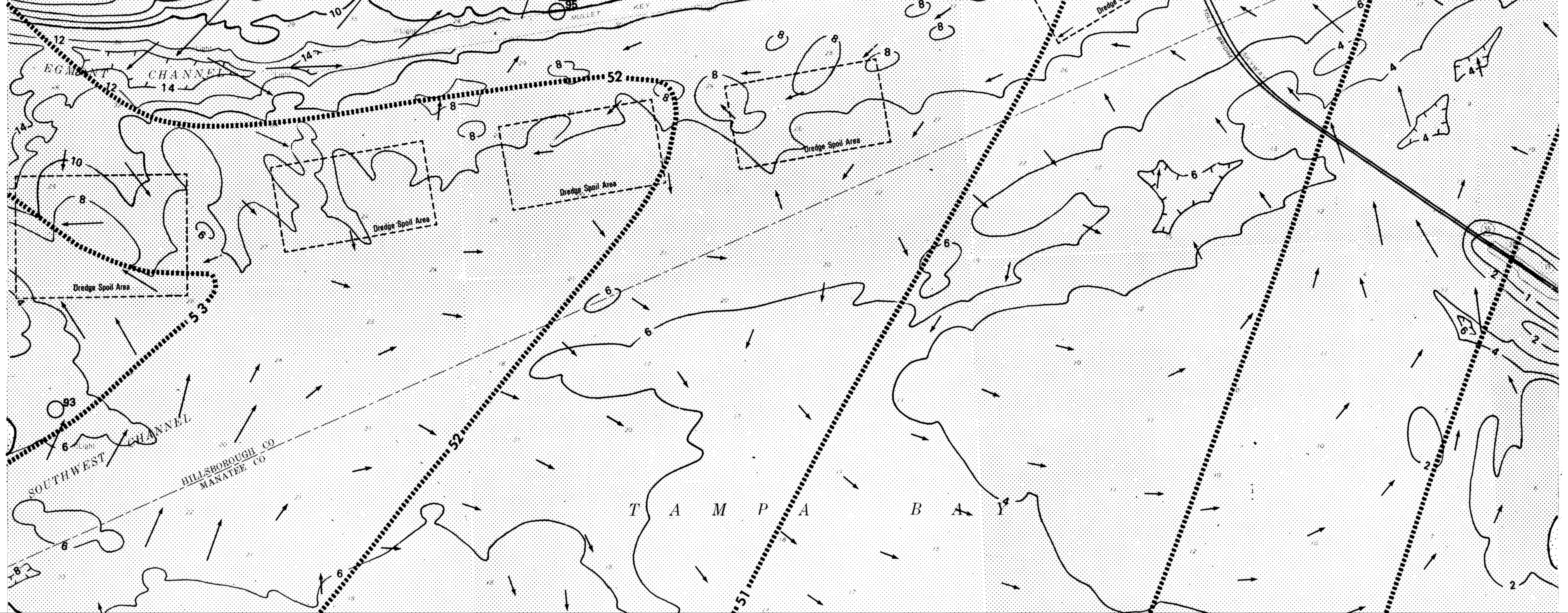
MAP B8

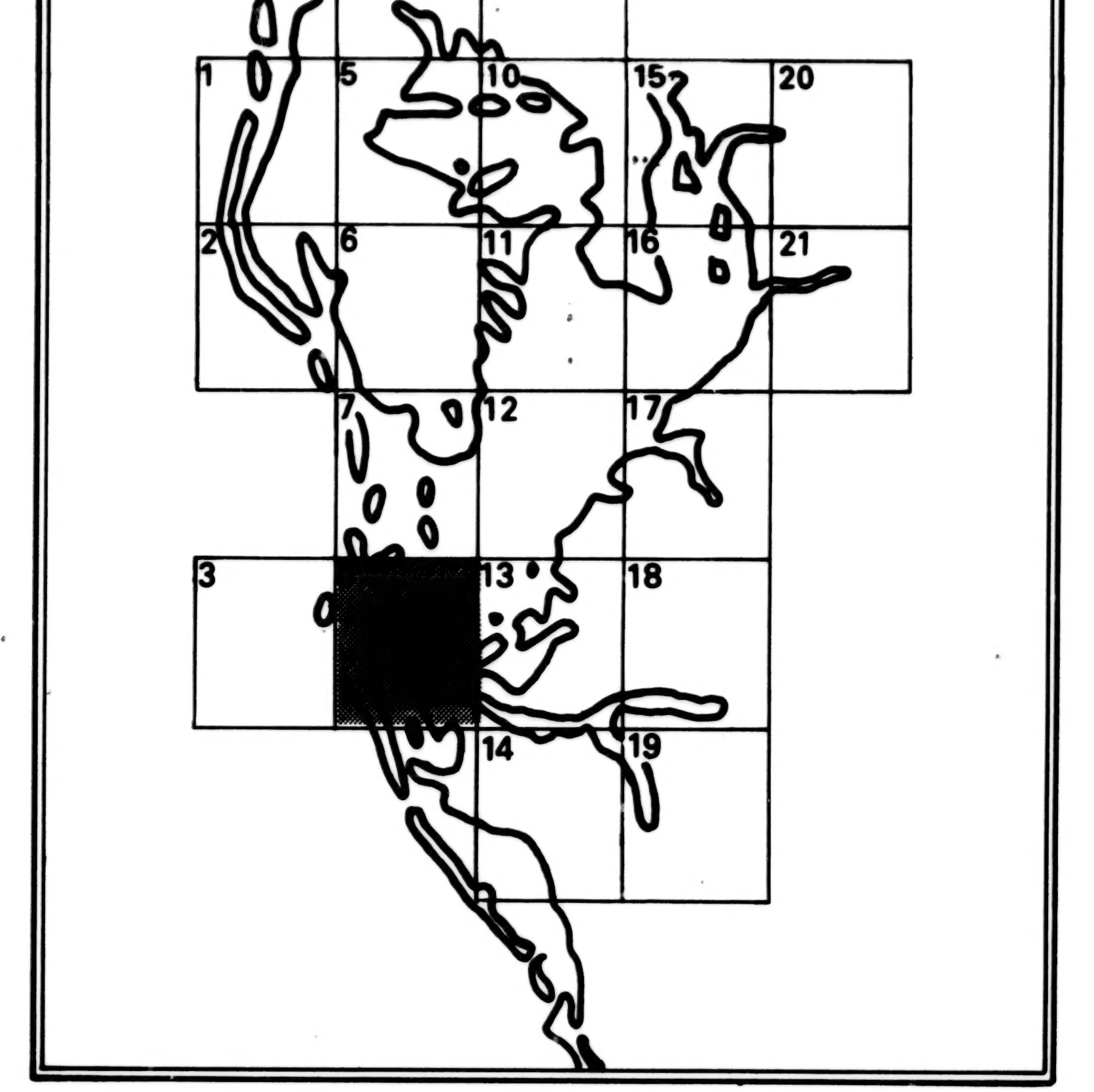
# TAMPA BAY ENVIRONMENTAL ATLAS

## WATER RESOURCES

## ANNA MARIA




EGMONT CHANNEL
Dredge Spoil Area
Dredge Spoil Area
Dredge Spoil Area
Dredge Spoil Area
Dredge Spoil Area
SOUTHWEST CHANNEL
HILLSBOROUGH CO
MANATEE CO
TAMPA BAY
52
53
51
14
12
10
8
6
4
2



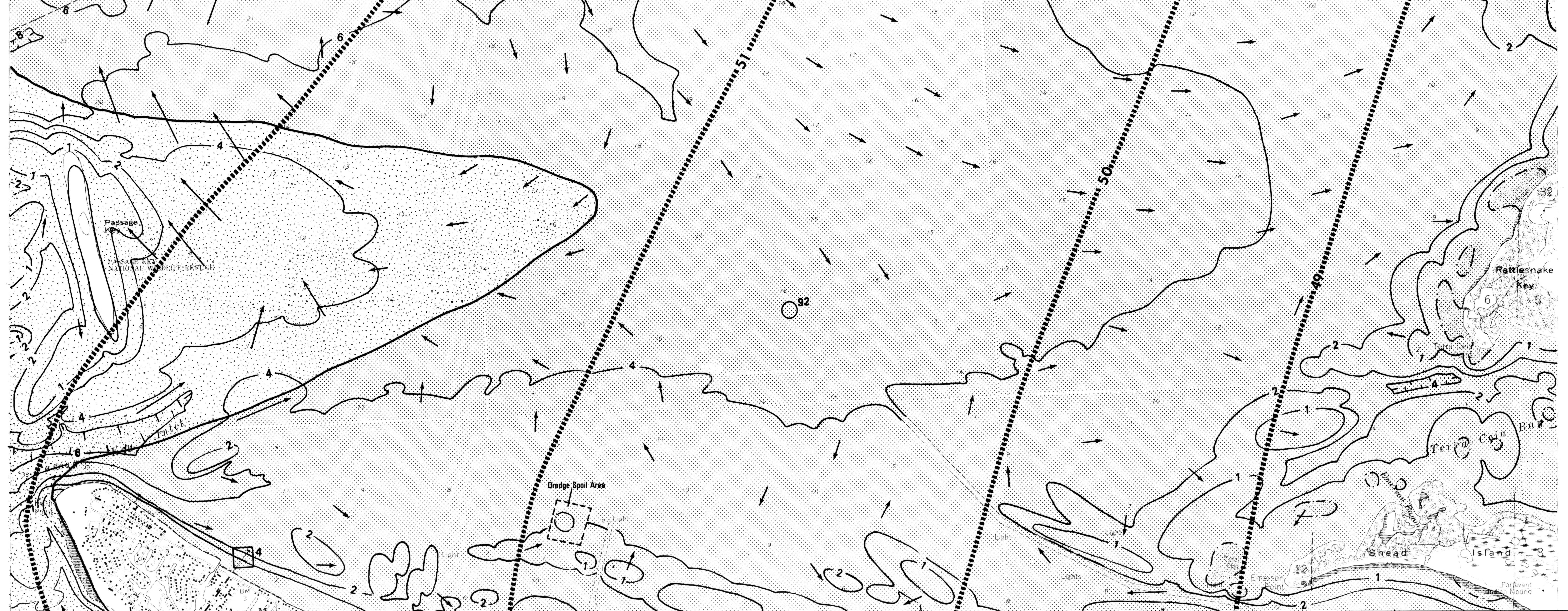
Scale 1:24,000

1984

# TOPICAL MAPS IN THIS ATLAS:
A. BIOLOGICAL RESOURCES
B. WATER RESOURCES

Produced by U.S. Fish and Wildlife Service
Projection and 1,000 meter grid, zone 17: Universal Transverse Mercator
10,000-foot grid ticks based on Florida coordinate system, east and west zones

Overlay material compiled in 1984 from latest available data obtained from Federal, State and Local government agencies and other sources.



10,000-foot grid ticks based on Florida coordinate system, east and west zones

Overlay material compiled in 1984 from latest available data obtained from Federal, State and Local government agencies and other sources.

There is no map A19 due to a lack of data.

## LEGEND

**▪▪▪▪▪35▪▪▪▪▪ MEAN ANNUAL MID-DEPTH SPECIFIC CONDUCTIVITY ISOPLETH (WATER QUALITY) CONTOUR MAP**

Five year mean annual specific conductivity
September 1978 - August 1983
(mmhos)

**POINT SOURCE DISCHARGES ***

▲10 Q= ___ Industrial Point Source Discharge. Q is permitted capacity in total gallons per day (tgd) or in millions of gallons per day (mgd).

△10 Q= ___ Municipal Point Source Discharge. Q is permitted capacity in total gallons per day (tgd) or millions of gallons per day (mgd).

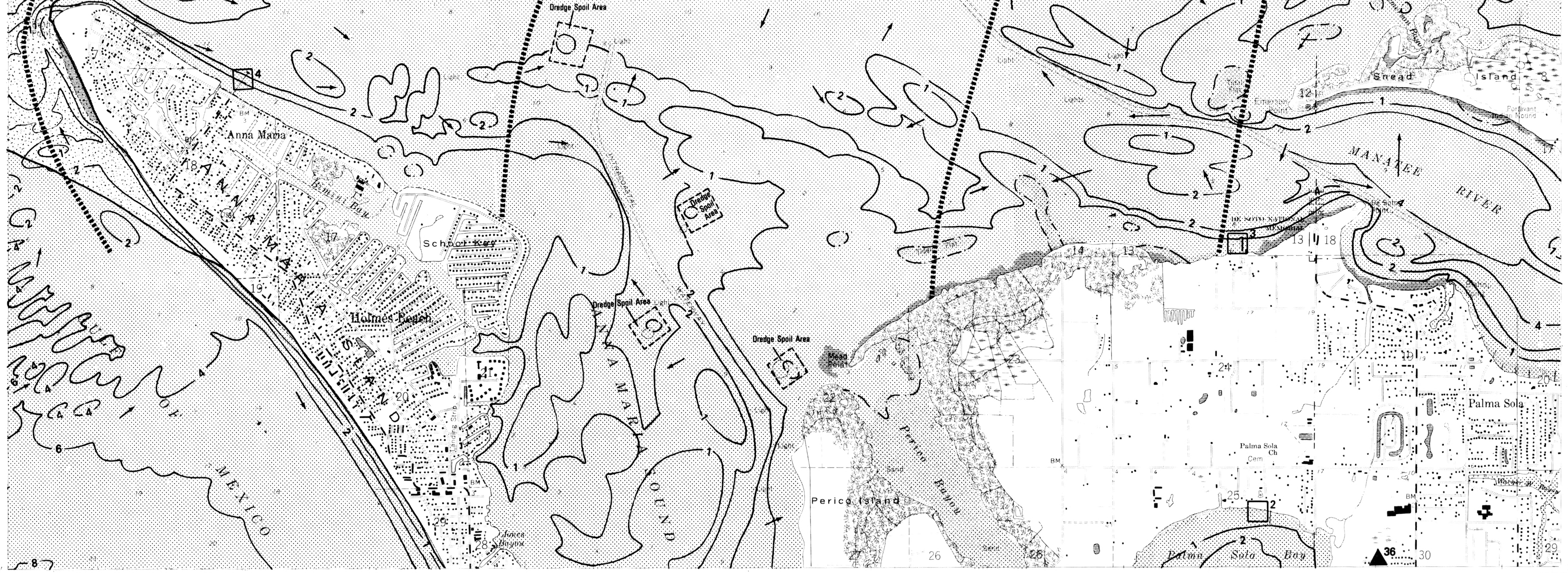
Dredge Spoil Area **DREDGE SPOIL DISPOSAL SITES**

**TIDE STATION ***
(National Ocean Service)

☼10 Active tide station. The tide station number is listed next to the symbol.

□10 Inactive tide station location. The tide station number is listed next to the symbol.

○10 **WATER QUALITY SAMPLING STATION ***
(Hillsborough County Environmental
Protection Commission)
Five year seasonal means, Sept. 1978 - Aug. 1983


Dredge Spoil Area
Anna Maria
Holmes Beach
Dredge Spoil Area
Dredge Spoil Area
MANATEE RIVER
Snead Island
Palma Sola
Perico Island
Perico Bayou
Palma Sola Bay
Jones Bayou
GULF OF MEXICO
ANNA MARIA SOUND
27°30′
82°45′
27°30′
82°37′30″

SCALE 1:24 000

1 ½ 0 1 MILE

□10 Active tide station. The tide station number is listed next to the symbol.

□10 Inactive tide station location. The tide station number is listed next to the symbol.

○10 **WATER QUALITY SAMPLING STATION ***

(Hillsborough County Environmental Protection Commission)

Five year seasonal means, Sept. 1978 - Aug. 1983

—2— **BATHYMETRY**

The contour interval is 2.0 meters with an initial 1.0 meter supplemental contour line added to better define shoals and inshore tidal flats.

-·-·-·- **INTERTIDAL ZONE**

This zone demarcates the area exposed and flooded by the tides and occurs between the line and the shore.

**GENERALIZED SEDIMENT MAP**

| | |
|---|---|
| ▨ | Sand |
| ▨ | Shelly Sand |
| ▨ | Silty Sand |
| ▨ | Clayey Sand |
| ▨ | Sandy Clay |
| ▨ | Silt |

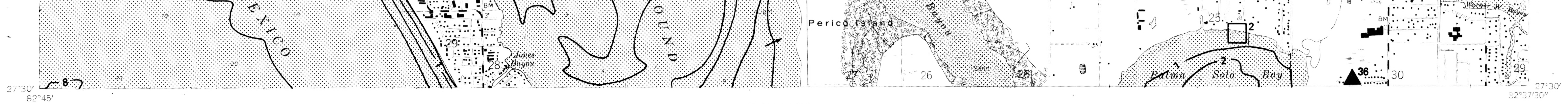
**NET TIDAL CURRENT**

Resultant tidal current. The direction is indicated by the arrow and the discharge range is feet per second.

| | |
|---|---|
| → | 0.01 - 0.10 ft/sec |
| ⟶ | 0.11 - 0.20 ft/sec |
| ⟶ | 0.21 - 0.30 ft/sec |
| ⟶ | 0.31 - 0.50 ft/sec |
| ⟶ | > 0.50 ft/sec |

F/S **FRESHWATER/SALTWATER INTERFACE**

(U.S. Geological Survey 1979)
250 mg/l line of equal chloride concentration in the upper part



THE TAMPA BAY ENVIRONMENTAL ATLAS WAS PRODUCED BY THE U.S. FISH AND WILDLIFE SERVICE, DIVISION OF BIOLOGICAL SERVICES NATIONAL COASTAL ECOSYSTEMS TEAM (FWS/OBS) FOR COASTAL PLANNERS, DECISION MAKERS AND THE GENERAL PUBLIC, TO DETERMINE AND EVALUATE CHANGE AND TO RESOLVE CONFLICTS AMONG LAND USES, FISH AND WILDLIFE REQUIREMENTS, AND THE MAINTENANCE OF ECOLOGICAL DIVERSITY. THE STUDY AREA INCLUDES A MAJOR PORTION OF THE COASTAL COUNTIES OF PINELLAS, HILLSBOROUGH, MANATEE, AND A SMALL PORTION OF SARASOTA. THERE IS NO ATTEMPT, IN THE DESIGN OR PRODUCTS OF THIS STUDY, TO DEFINE THE LIMITS OF PROPRIETARY JURISDICTION OF ANY FEDERAL, STATE, OR LOCAL GOVERNMENT TO ESTABLISH THE GEOGRAPHICAL SCOPE OF THE REGULATORY PROGRAMS OF GOVERNMENT AGENCIES.

THIS MAP HAS BEEN COMPILED FROM A VARIETY OF SOURCE MATERIALS INCLUDING MAPS, AERIAL PHOTOS, AND REPORTS. SINCE MANY SOURCES CONTAINED GENERALIZED LOCATIONS OF RESOURCES AND OTHER MAPPED FEATURES, THE USER SHOULD NOT RELY ON THESE MAPS FOR PRECISE MEASUREMENTS OF DISTANCES OR AREAS.

## PRIMARY SOURCES OF MAPPED INFORMATION

**SALINITY**: Conductivity for Tampa Bay water quality sampling stations Sept. 1978 - August 1983. Hillsborough County Environmental Protection Commission.

**POINT SOURCE DISCHARGES**: Computer printout of industrial and municipal point source discharges in West Central Florida. Florida Dept. of Environmental Regulation, 1983.

**DREDGE SPOIL DISPOSAL AREAS**: Dredge and Spoil easement location maps. Florida Dept. of Natural Resources.

**N.O.S. TIDE STATIONS**: Index of tide stations for the state of Florida. National Ocean Service, Rockville, Md. 1981.

**WATER QUALITY**: Total chlorophyll, conductivity, turbidity, temperature and total nitrogen data for Tampa Bay water quality stations, Sept. 1978 - August 1983. Hillsborough County Environmental Protection Commission.

**BATHYMETRIC**: Bathymetric map to St. Petersburg Quadrangle, N.O.S. 1978.

**INTERTIDAL ZONE**: Nautical Chart #'s 11410, 11413, 11414 and 11425. N.O.S., Rockville, Md. 1983.

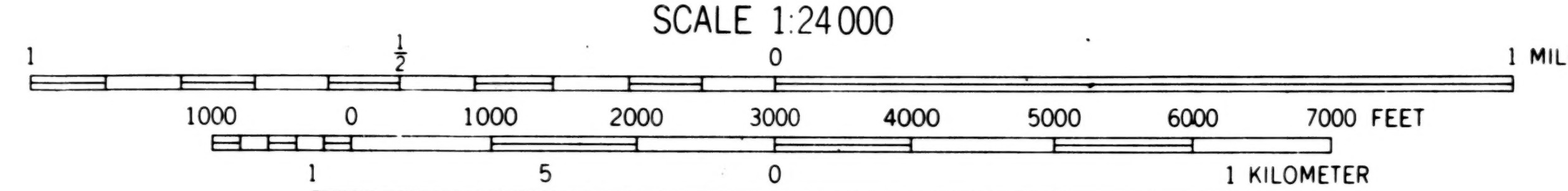
**SEDIMENTS**: Sediments, oceanographic observations and Floristic data for Tampa Bay, Florida and adjacent waters, 1961-1965, Taylor and Saloman, 1969.

**TIDAL CURRENTS**: Changes in tidal flow, circulation and flushing caused by dredge and fill in Tampa Bay, Florida. U.S. Geological Survey Open File Report #84-447. Goodwin, 1984.

**FRESHWATER-SALTWATER INTERFACE**: Position of the Freshwater-Saltwater interface in the upper part of the Floridan aquifer, Southwest Florida, 1979. U.S.G.S. water resources open-file report 82-90. Causseaux and Fretwell, 1982.

**FOR COMPLETE REFERENCE SEE MAP NARRATIVE**

SCALE 1:24 000



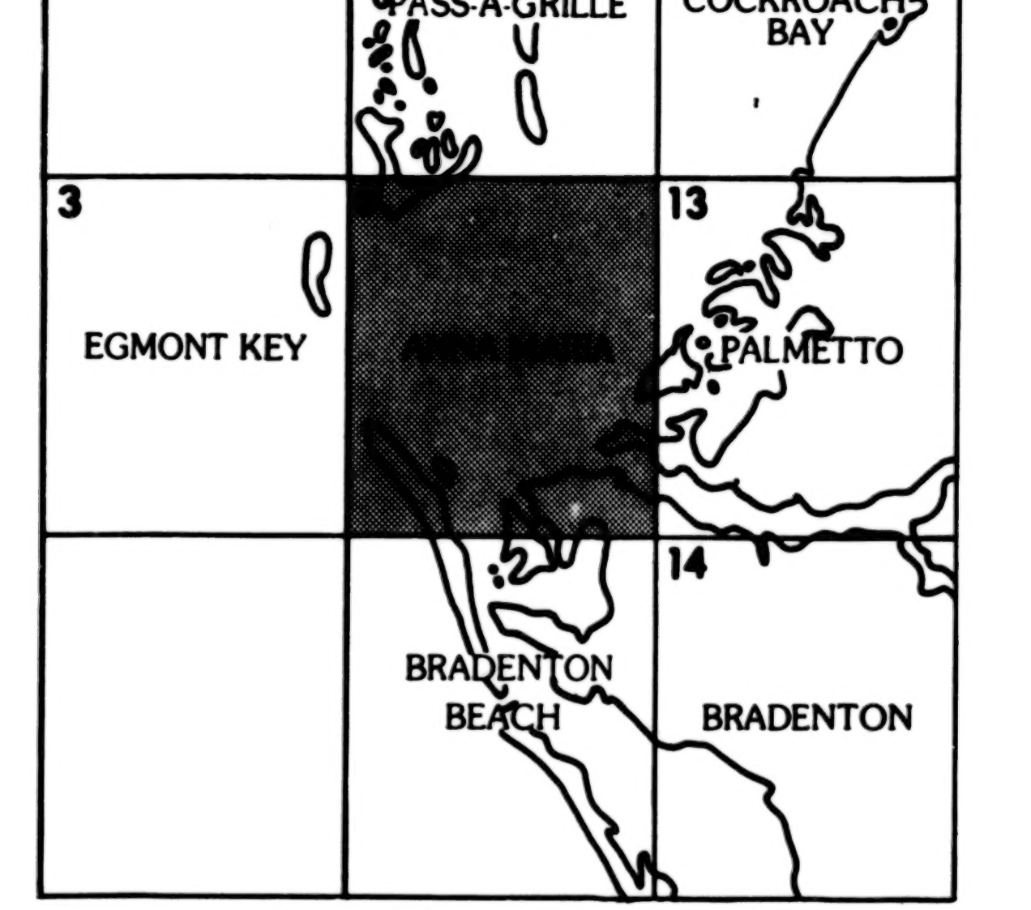
## Supplemental Legend (Cont'd)

**Station #93** Lat. 27°34'48" Long. 82°44'42"

| PARAMETER | SPRING (3-5) | SUMMER (6-8) | FALL (9-11) | WINTER (12-2) | ANNUAL (1-12) |
|---|---|---|---|---|---|
| Total Chlorophyll (ug/l) | 14.9 | 15.1 | 18.1 | 11.4 | 14.9 |
| Conductivity (mmhos) | 53833 | 52778 | 51967 | 53620 | 53050 |
| Turbidity (NTU'S) | 4.4 | 2.3 | 3.8 | 4.4 | 3.7 |
| Temperature (°C) | 22.3 | 29.5 | 25.2 | 16.2 | 23.3 |
| Total Nitrogen (mg/l) | 0.38 | 0.51 | 0.66 | 0.39 | 0.48 |

**Station #95** Lat. 27°36'30" Long. 82°41'42"

| PARAMETER | SPRING (3-5) | SUMMER (6-8) | FALL (9-11) | WINTER (12-2) | ANNUAL (1-12) |
|---|---|---|---|---|---|
| Total Chlorophyll (ug/l) | 16.9 | 14.3 | 18.5 | 12.7 | 15.6 |
| Conductivity (mmhos) | 53333 | 51465 | 50633 | 53527 | 52240 |
| Turbidity (NTU'S) | 5.1 | 2.1 | 4.7 | 5.4 | 4.3 |
| Temperature (°C) | 22.1 | 29.6 | 25.2 | 16.3 | 23.3 |
| Total Nitrogen (mg/l) | 0.38 | 0.57 | 0.48 | 0.41 | 0.46 |



*Note: Specific conductivity values on the supplemental legend should be in μmhos.*

→ 0.01 - 0.10 ft/sec

→ 0.11 - 0.20 ft/sec

→ 0.21 - 0.30 ft/sec

→ 0.31 - 0.50 ft/sec

→ > 0.50 ft/sec

F ▬▬▬▬▬ S **FRESHWATER/SALTWATER INTERFACE**

(U.S. Geological Survey 1979)
250 mg/l line of equal chloride concentration in the upper part of Floridan aquifer.

**Symbols appearing with numbers are described more fully in the narrative*

## Supplemental Legend for Water Quality Stations on This Map

**Station #91** Lat. 27°37'30" Long. 82°38'24"

| PARAMETER | SPRING (3-5) | SUMMER (6-8) | FALL (9-11) | WINTER (12-2) | ANNUAL (1-12) |
|---|---|---|---|---|---|
| Total Chlorophyll (ug/l) | 17.7 | 15.5 | 20.2 | 12.5 | 16.5 |
| Conductivity (mmhos) | 51416 | 49766 | 48967 | 52622 | 50693 |
| Turbidity (NTU'S) | 4.4 | 2.1 | 5.2 | 4.4 | 4.0 |
| Temperature (°C) | 22.2 | 29.7 | 25.4 | 16.3 | 23.4 |
| Total Nitrogen (mg/l) | 0.42 | 0.51 | 0.61 | 0.51 | 0.51 |

**Station #92** Lat. 27°33'00" Long. 82°41'12"

| PARAMETER | SPRING (3-5) | SUMMER (6-8) | FALL (9-11) | WINTER (12-2) | ANNUAL (1-12) |
|---|---|---|---|---|---|
| Total Chlorophyll (ug/l) | 12.3 | 15.1 | 18.3 | 11.0 | 14.2 |
| Conductivity (mmhos) | 52500 | 52149 | 49833 | 52400 | 51720 |
| Turbidity (NTU'S) | 4.0 | 3.2 | 5.2 | 3.2 | 3.9 |
| Temperature (°C) | 22.4 | 29.6 | 25.3 | 16.4 | 23.4 |
| Total Nitrogen (mg/l) | 0.30 | 0.54 | 0.58 | 0.37 | 0.45 |

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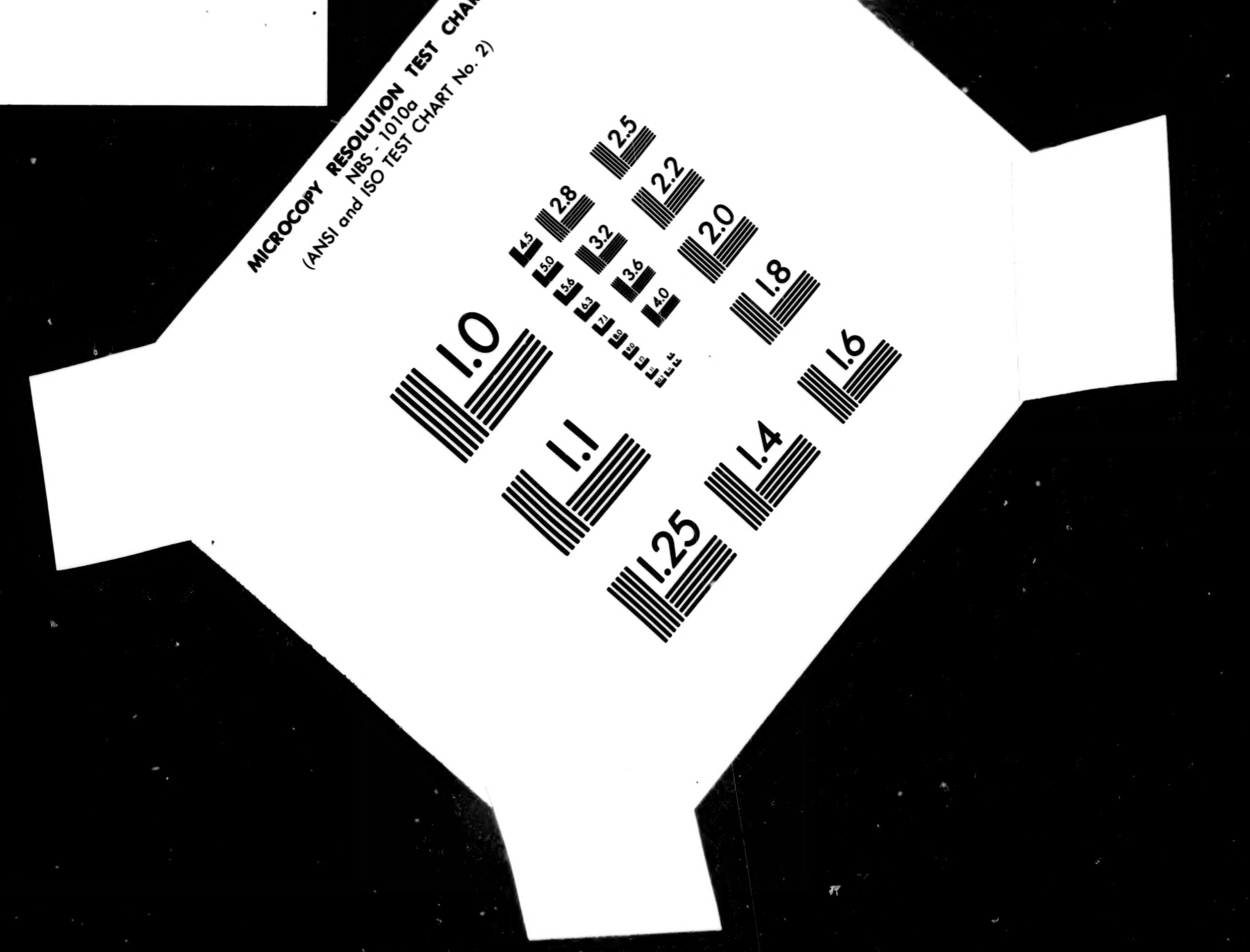
MICROCOPY RESOLUTION TEST CHART
NBS - 1010a
(ANSI and ISO TEST CHART No. 2)
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
6.3


MICROCOPY RESOLUTION TEST CHART
(ANSI and ISO TEST CHART No. 2)
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2